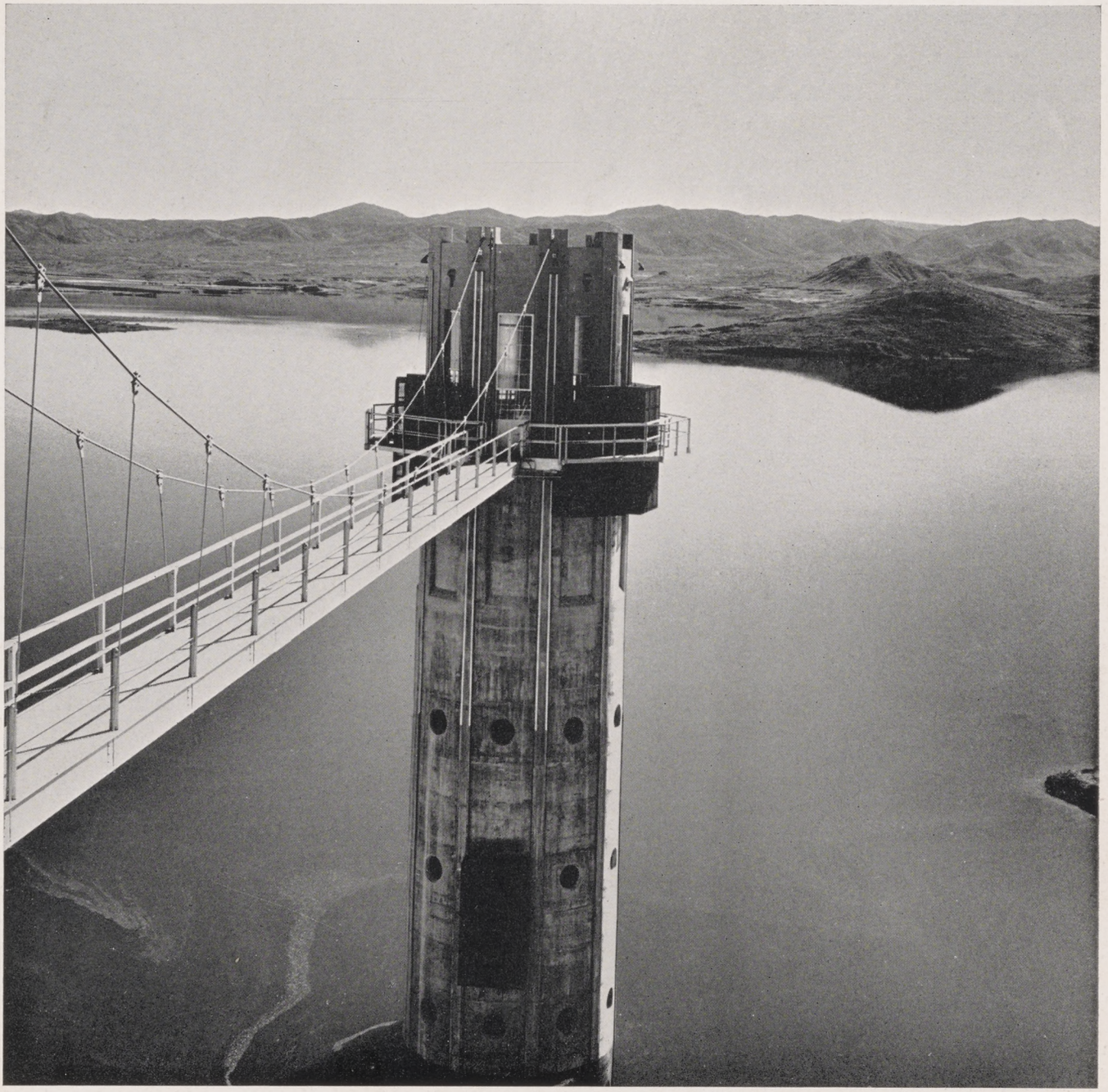
• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Vol. VI. DECEMBER 25, 1939 No. 12



Lake Cajalco as it appears from the outlet tower. The reservoir contained 25,000 acre-feet of Colorado River water when this picture was taken on December 15, 1939.

• COLORADO RIVER •
AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

306 West Third St.
Los Angeles, California

Published monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. VI December 25, 1939 No. 12

District Attention Now Centered On Distribution Lines

With the main line of the Colorado River Aqueduct completed, and water now being stored in the Cajalco Reservoir at the terminus of the main aqueduct, District engineering and construction forces in 1940 will concentrate their attention on the completion of the vast network of distribution lines which will carry aqueduct water to each of the thirteen cities which comprise The Metropolitan Water District of Southern California.

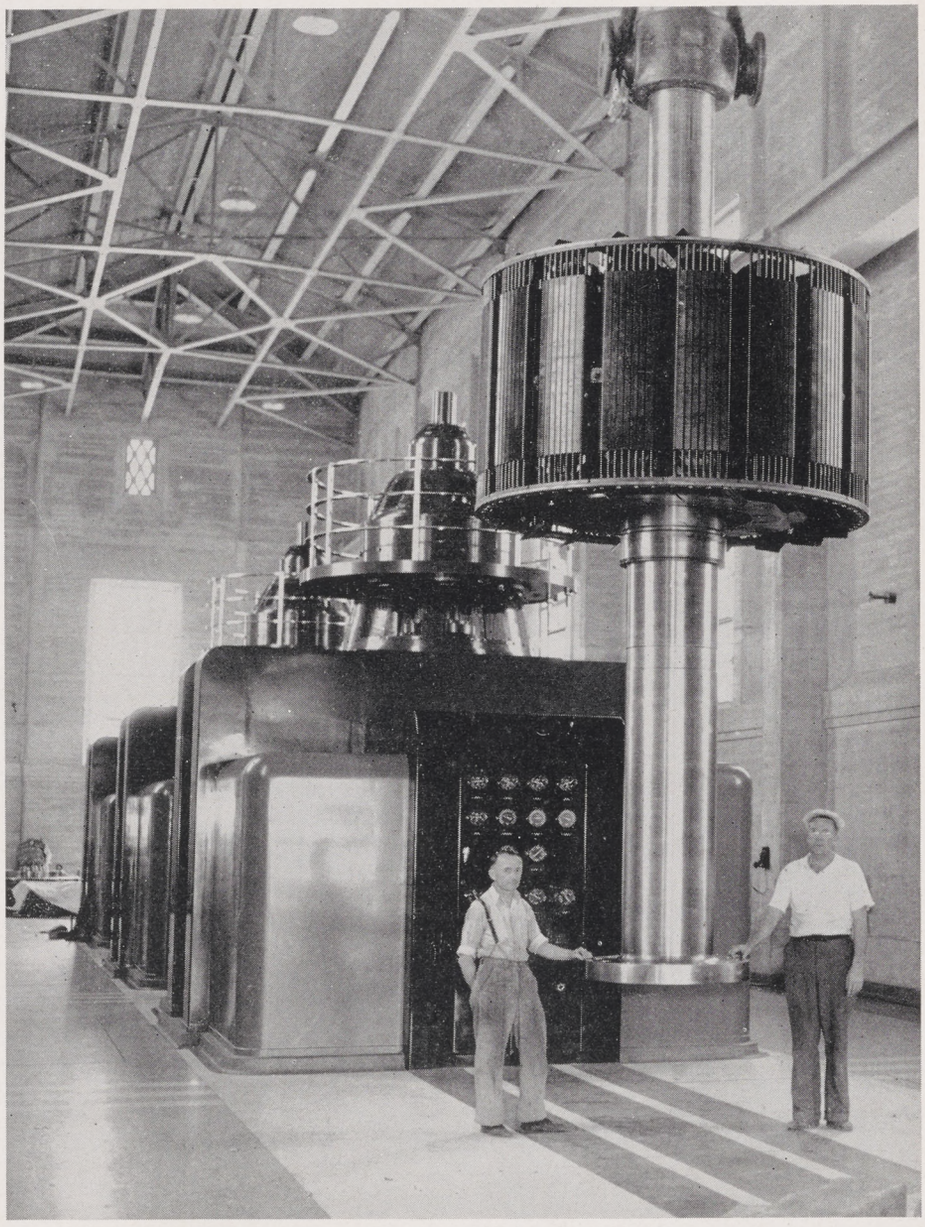
Although the work scheduled for next year will not involve the building of such large diameter lines as have already been completed, the remaining construction is of equal importance, since without these final lines all of the member cities cannot receive aqueduct water.

Because of the tremendous size and spectacular nature of the completed features of the main aqueduct and the upper feeder of the distribution system, the lines remaining to be completed appear to be dwarfed by the comparison. When considered by itself, however, this final "clean-up" job assumes considerable proportions since more than 50 miles of delivery lines and cross-feeders will be built to a total of seven District cities at a cost of approximately six million dollars.

Distribution system work already finished includes two reservoirs and approximately 100 miles of feeder lines and laterals. The reservoirs, both of which are formed by compacted earthfill structures, are Cajalco, with an initial capacity of 100,000 acre-feet, and Palos Verdes, with a capacity of 1000 acre-feet of water. The feeder lines are in two major sections; the upper feeder or "high line" of the distribution system, and the Palos Verdes cross-feeder.

The upper feeder is approximately 60

(*Continued on Page* 4.)



The giant rotating unit of a motor in the Gene pumping plant is pulled out for inspection. Each of the motors in this plant is rated at 9,000 horsepower.

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Transmission....Robt. N. Allen
Maintenance.....W. J. Neale
Field. Supt. Pumping.....T. T. Walsh

SUPERINTENDENTS OF CONSTRUCTION PUMPING PLANTS
Intake and Gene....T. T. Walsh
Eagle Mt. and Hayfield.....G. E. Archibald

SUPERINTENDENTS
(Main Aqueduct Tunnels)
San Jacinto Tunnel, District Force Acct., B. C. Leadbetter, Gen. Supt.

Softening and Filtration Plant
Griffith Company. Weymouth Crowell Co., Project Manager, Olen Evans, Field Supt.

Good Progress Reported At Softening Plant

With more than 75 contractor's employees now working on the job, rapid progress is being made on the construction of the District's new water softening and filtration plant. The plant is located on the upper feeder of the distribution system near La Verne, and when completed it will soften and filter all water used for domestic and industrial purposes in the cities of the Metropolitan Water District.

Excavation is now under way for the mixing basin and zeolite bed for the plant itself and construction of the concrete aggregate batching plant was about completed on December 15.

Work has also been started on the construction of the railroad spur running into the plant. Connecting with the Santa Fe Railway, the main spur will be approximately one mile long, and in addition a number of side tracks within the plant area are to be constructed.

Field parties of the Distribution Division are now engaged in completing property line ties and profiles for the waste water line from the plant. This line will be approximately 40 miles long, and will extend from the plant to tidewater lands in the vicinity of Seal Beach.

The softening of Colorado River water at the new plant will be accomplished by the lime-zeolite method. Using this method, the District will be able to provide clear, sparkling water softened to a degree which will make it highly desirable for domestic and industrial use.



Resident Engineer B. H. Martin, left, and Distribution Engineer R. B. Diemer look over the job at the water softening and filtration plant near La Verne.



Batching plant being erected for use in connection with the construction of the District's water softening and filtration plant.

Board Considers Many Requests For Annexation

One of the most complicated problems now facing the District's Board of Directors and staff is that presented by the proposed annexation of additional areas and communities not included among the present member cities of the Metropolitan Water District.

Many of these areas, which have requested information or have made formal application for annexation to the M.W.D., are not in themselves large enough to justify the expense of building delivery lines to them. In order to solve this problem so that such annexations would be economical for both the District and the outside areas, numerous studies have been undertaken with the object of consolidating the smaller areas into units which would be large enough to meet the District's annexation requirements.

At its meeting on December 15, 1939, the Board of Directors outlined a general policy relative to areas along the south coast of Orange County in a letter sent to the Laguna Beach County Water District which has applied for annexation to the M.W.D. Excerpts from that letter are quoted below:

"This Board and its Water Problems

(*Continued on Page* 6.)

District Attention Now Centered On Distribution Lines

(*Continued from Page 2.*)

miles in length, the greater part of which has a capacity of 750 cubic feet of water per second, or one-half the ultimate capacity of the main aqueduct. Running north from Cajalco Reservoir to the vicinity of Fontana it then heads northwest and west to its terminus at the west portal of San Rafael Tunnel No. 2. Part of the westerly section of the line lies in a mountainous area and its construction involved the driving of eight tunnels having a total length of about sixteen miles. The terminus of the feeder, at the west portal of San Rafael No. 2, is within the city limits of Glendale near the east end of Glenoaks Blvd.

San Rafael Tunnels Nos. 1 and 2 on the upper feeder are separated by Eagle Rock Canyon and in this canyon is located the connection for the Palos Verdes cross-feeder. From this point the latter line is built south and west to its terminus in the Palos Verdes Reservoir, a distance of about 31 miles.

The M.W.D. cities of San Marino and Pasadena will be served with water from the upper feeder; and Los Angeles, Compton, Torrance, the Los Angeles harbor area, and Long Beach, will be served by the Palos Verdes cross-feeder.

Surveys and plans are being pushed rapidly at the present time for the lines which will supply water to the seven other District cities, and it is expected that bids will be called for on the con-

(*Continued on Page 10.*)



A section of Lake Cajalco as seen from the eastern part of the dike. Cajalco dam at the left, and the outlet tower in the right center of the picture.



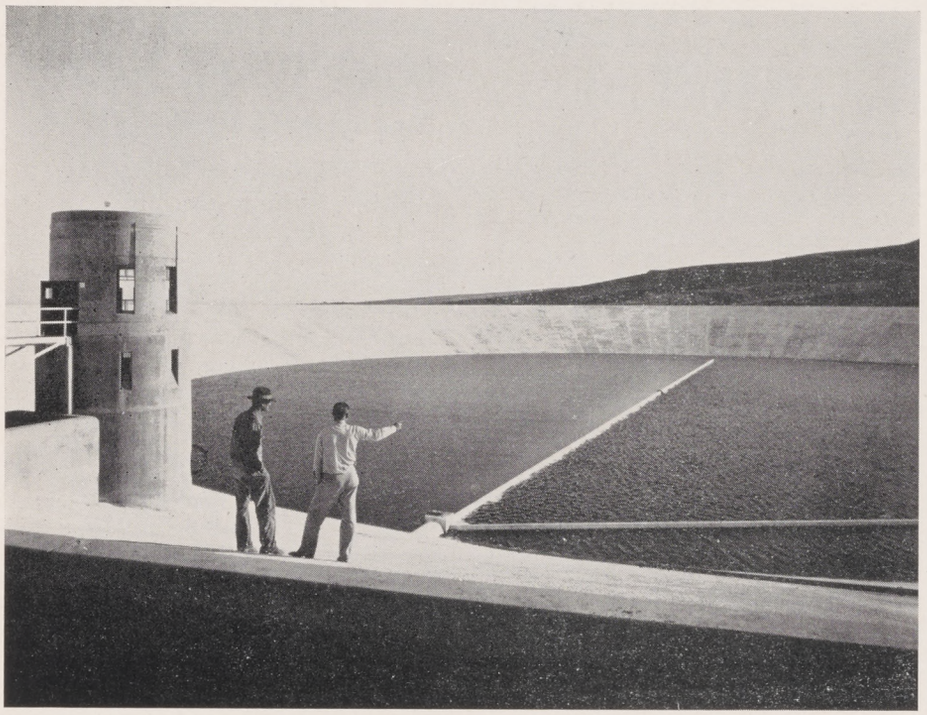
The steel bridge and pipe line of the distribution system upper feeder at the Santa Ana River crossing. This section of the line is ten feet in diameter.

Proposal Made To Landscape Reservoir Sites

Because of their accessibility from main highways and because of their scenic beauty, both the Cajalco and Palos Verdes Reservoirs of the aqueduct system are attracting large numbers of visitors. Although the District has made no attempt to make an accurate check, reports from these two locations indicate that thousands of spectators have viewed the two reservoirs, particularly on week-ends.

Due to this interest on the part of the public at large, the District's Board and Staff are now giving consideration to the possibility of landscaping and beautifying certain sections of District property immediately adjacent to the two reservoirs.

A special committee of the Board of Directors has been appointed to study the problem and to make recommendations concerning the landscaping of these areas. This committee includes Chairman Whitsett, and Directors Humphreys, Greer, Cook, Nordlinger, and Butler. The Palos Verdes Reservoir in particular is expected to attract the attention of large numbers of visitors because of the fact that it is located on one of the principal scenic highways which cross the Palos Verdes Hills.



The recently completed Palos Verdes Reservoir. The water on the floor of the reservoir is only a few inches deep and is placed there for curing purposes.

District Sells Construction Power Lines

Having completed the job for which it was built, the District's construction power system has now been taken out of operation and the line itself has been disposed of. With the exception of a few sections at the eastern end of the main aqueduct which are being retained by the District, all other parts of the system have now been sold.

At its meeting on December 1, 1939, the Board of Directors approved the sale of the remaining sections for a total of $273,508.85. The power lines were sold in place, with all dismantling to be done by the purchasers.

Of the lines sold on December 1, Schedules 1, 4, 6, 7 and 8, were bought by the Fritz Ziebarth Company for $204,731.75. The Nevada-California Power Company purchased Schedules 2A, 3, and 5 at a cost of $66,067.00. Schedule 9 was sold to the firm of Bennett and Taylor for $2,710.10.

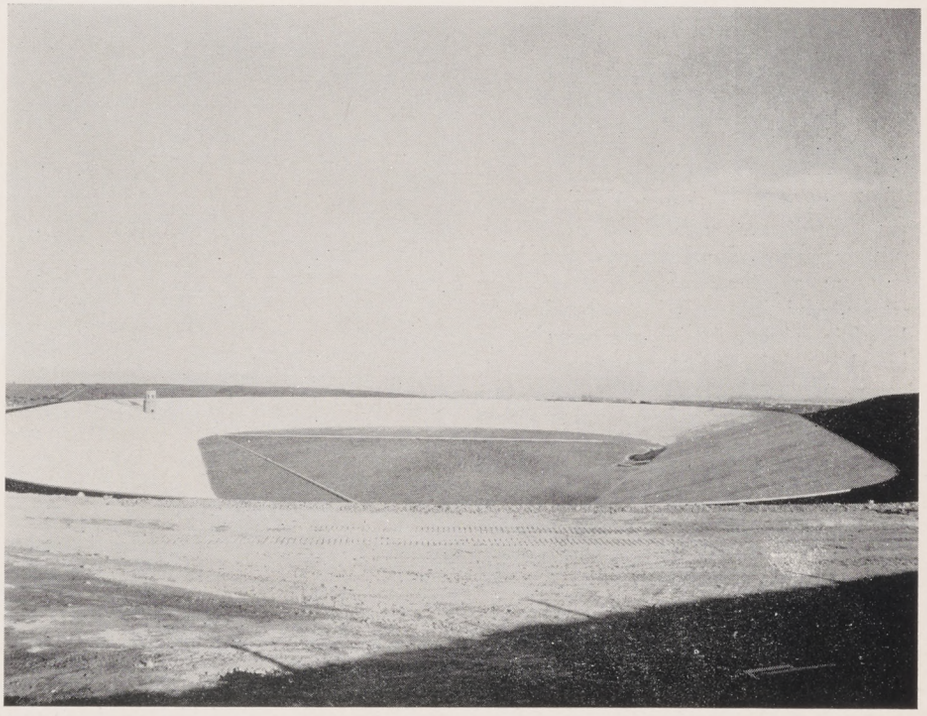
The sale of these remaining schedules involved approximately 162 miles of three-phase, 66-kv. lines, and 233 miles of three-phase, 33-kv. lines. The principal items of material in these lines included 1500 tons of copper, 7000 poles, and about 40,000 insulators.

Parker Dam-Phoenix Transmission Line Ready In January

Recent information received by the District indicates that rapid progress is being made on the electric power transmission line from Parker Dam to Phoenix, Arizona, and that this line will probably be ready for operation in January of 1940.

During the time that the Parker Dam electric power generating plant, now under construction, is being built, unused Boulder Dam power allocated to the District will be sold to the Salt River Valley Water Users' Association and the Central Arizona Light and Power Company. The electrical energy will be delivered over the M.W.D. power lines from Boulder Dam to the Gene pumping plant and thence to Phoenix over the line now being completed by the Federal Government. The Metropolitan Water District will be credited with the revenue from the sale of the power, which is expected to amount to a number of hundred thousand dollars.

The Parker Dam power plant is expected to be completed in the summer of 1941. Present plans call for the installation of three 25,000 kw. generating units in this plant, two of which will supply power for the central Arizona consumers, and one to supply energy for the Gila irrigation project of the Bureau of Reclamation. The M.W.D. will be credited with one-half of the revenue of the power developed at Parker Dam and sold to the Arizona consumers.



Another view of the newly finished Palos Verdes Reservoir. The reservoir has a capacity of 1000 acre-feet of water which will be used by Long Beach, Torrance, Compton, and the Los Angeles harbor area.

MONTHLY REPORT REVIEWS ACTIVITIES ALONG THE AQUEDUCT LINE

(EDITOR'S NOTE: The following is a brief summary of some of the activities of the District as set forth in the monthly report of General Manager F. E. Weymouth, filed with the Board of Directors in December, covering work done in November.)

Miscellaneous Activities Division

On Sunday, November 19, 1939, members of the Board of Directors and the District's Staff, together with municipal officials of the thirteen District cities, gathered at Cajalco to witness the delivery of Colorado River water into the reservoir basin. The occasion was marked by a brief ceremony and a half-hour broadcast over the Columbia Broadcasting System. Officers of the State Motor Patrol reported that approximately 40,000 persons came to view the new reservoir from the dam and roadway outside its boundaries during the afternoon of November 19.

Main Aqueduct

Construction—Except for buildings necessary to house unsold compressors, hoists, and other heavy equipment, all camps on the San Jacinto Tunnel are being dismantled and cleaned up. This work is completed at East Portal and Cabazon and is nearing completion at Lawrence, Potrero, and West Portal. Colorado River water began flowing into the tunnel about noon, November 1. All backfill on the Casa Loma Siphon was completed on November 11.

Maintenance—At Parker Dam the discharge averaged 10,975 cubic feet per second during the month. Approximately 500 tourists visited the dam in November. An inspection of Eagle Mountain tunnels was made November 25, and they were found in good condition with no apparent change since they were placed in operation. Equipment placed in salvage during the month was valued at $60,640, making a total to date of $1,729,529. Total salvage disbursements to date amount to $857,003.

Civil Engineering Division

Design—The largest part of the work of the design section was in connection with various details for the water softening and filtration plant.

Hydrography—Current meter gauging stations were maintained and rated on the main aqueduct at the beginning of canal near Vidal wasteway, and near the east portal of Valverde Tunnel. The cooperative survey of water use conditions in the San Jacinto and Beaumont areas was continued (in cooperation with the Federal Soil Conservation Service).

Distribution Division

Field and Office Engineering—Surveys for a feeder from the softening and filtration plant through Brea Canyon into Orange County were continued. Lines and grades were established for the construction of the softening plant and appurtenant works. Further studies and estimates were made concerning possible annexations to the District.

Construction—At the Palos Verdes Reservoir all earthwork in the main reservoir was completed November 15 and two days later the placing of gunite lining was finished except for rebound clean-up and application of curing compound and whitewash, which have now been accomplished. At the water softening plant equipment arrived on November 13, and clearing of trees started the next day. Construction of necessary buildings is progressing; water and power lines are being installed; and excavation for the sand filters and mixing and settling basins is being made.

Electrical Engineering Division

Intake and Gene pumping plants were operated continuously, and the Iron, Eagle, and Hayfield plants were operated on a construction schedule throughout the month. The construction power, water, and telephone systems were operated continuously; 194,176 kilowatt hours of energy and 281,800 cubic feet of water were delivered during the month; and 5,586 telephone messages were transmitted. Bids for the remaining portions of the construction power lines were opened November 30. Work was continued on the dismantling and salvaging of miscellaneous equipment on the construction water system.

Purchasing Division

A total of 460 purchase orders was issued, covering purchases amounting to approximately $18,700. Carload forwardings for the month totaled 20.

Accounting and Costkeeping

The total cost of the work accomplished to November 30, 1939, was $182,009,015.93.

Board Considers Many Requests For Annexation

(*Continued from Page* 3.)

Committee have given detailed consideration to the annexation application of your Water District. In giving such consideration, the Board's attention has been directed to the fact that there also is pending before the Board an application for annexation received by this Board in May, 1936, from the South Coast Water District. In addition, this Board has given its attention to the annexation application received from the City of Newport Beach under date of June 15, 1931, and the communication addressed to the Metropolitan Water District under date of May 11, 1939, by Mr. R. L. Patterson, City Engineer of the City of Newport Beach, in which Mr. Patterson stated that he had been directed by the City Council of Newport Beach to secure certain data relative to the cost and the possible methods of delivery of Colorado River water to the City of Newport Beach.

"Colorado River water made available to the South Coast territory, or any portion thereof, would be delivered by way of the distribution line extending from La Verne to the cities of Anaheim, Fullerton, and Santa Ana. Delivery of aqueduct water to the South Coast Area would require the enlargement of the capacity of this distribution line over that which will be required to meet the needs of the three Orange County cities now in the District. It would also call for the construction of a pipe line from Santa Ana to a convenient point of delivery on the South Coast.

"In giving consideration to your annexation application, this Board has been bound to take account of the fact that all of the developed areas and the areas susceptible of development on the South Coast of Orange County are confronted with a common water problem.

"After giving full consideration to all of the engineering and economic factors involved, the Board has reached a decision that an annexation unit including the South Coast Water District, the Laguna Beach County Water District, the City of Newport Beach, and the strip of land situated between the Laguna Beach County Water District and Newport Beach constitutes a consolidated area to which favorable consideration would be given for annexation to

(*Continued on Page* 12.)

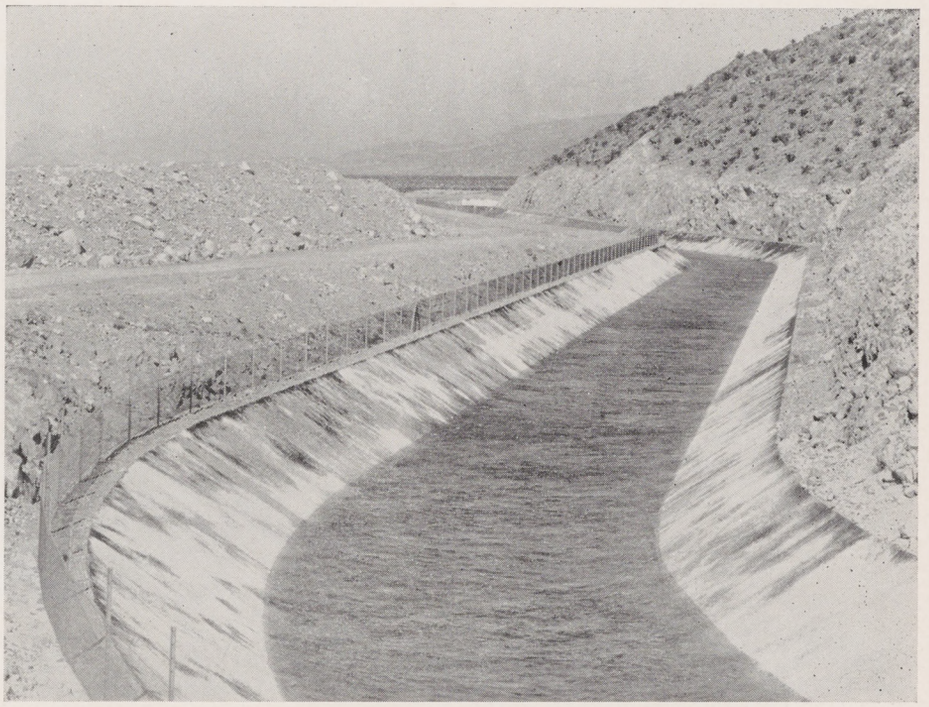
An Added Gift That Money Couldn't Buy

As a Christmas present for the year 1939, the thirteen cities of the Metropolitan Water District have presented themselves with a gift whose worth and value will become greater and greater as the years roll by. That gift is an unfailing supply of water here on the semi-arid coastal plain of Southern California.

To make that gift possible, the citizens of these thirteen cities placed their confidence in a group of men and assigned them the task of building the world's greatest aqueduct.

The story of the building of the Colorado River Aqueduct will be told and re-told for generations to come. In the main, however, this account will have to do with the rock that was blasted, the concrete that was poured, and the steel that was placed. Little has been said or will be remembered about the character that has been built into the aqueduct.

And, although this character is an intangible thing—it is the ingredient that will make the aqueduct a priceless heritage for the generations to come. It is this character that will hold the aqueduct together—the steel and concrete merely giving form to the giant water system.



A main aqueduct canal section winds its way around the base of desert hills in the vicinity of the west portal of the Iron Mountain Tunnel.

This character has been supplied by thousands of men, and women, who have worked to build the aqueduct. Because there have been thousands, it is impossible to name each man or to evaluate his contribution. And, to keep this story from appearing to be a Christmas fantasy, it must be admitted that there was probably a certain percentage of those employed on the project to whom the work was just another job.

More than canceling out this percentage, however, was the determination and driving power and loyalty of hundreds upon hundreds of men to whom the building of the aqueduct was the accomplishment of a great dream, and not just another job. This latter group was not confined to any one bracket in the organization that was created to build the Colorado River Aqueduct. The idealism showed itself in the work of a cookhouse flunky as well as in the administrative skill displayed by men at the top of the ladder.

Many of these men have left the District and have scattered to the far corners of the world. Their work will not be forgotten as long as water flows through the aqueduct. But the public at large, the people whose very existence will depend upon that water, probably will never appreciate the very full measure of value that it has received in return for the money it has spent.

True, the aqueduct builders have been well paid—based upon compensation generally paid for such work.

Compared with the Hollywood scale, however, the compensation of the aque-

(*Continued on Page* 8.)



Looking out of the west portal of the Valverde Tunnel and into the inlet channel leading to Cajalco Reservoir. No, the boat didn't go all the way through the aqueduct.

An Added Gift

(*Continued from Page 7.*)

duct builder was microscopic. Recently a famous Hollywood radio commentator rejoiced over the fact that a well known screen couple had solved their domestic troubles because the husband—who is far from being one of the brightest stars in the cinema—is making a "comeback" and is now receiving a salary of $7,000 per week. It took a top flight aqueduct builder two years to make that much money.

The comparison is possibly far fetched, but it might be worth remembering when the tax bills come around. Somehow it always seems perfectly fitting for "We, the people" to pay our movie bill, our tobacco bill, or our racing bets without question.

But, when we get around to paying for such things as water, and schools, and streets, and sanitation, etc., we scrutinize our tax bill with an "open" but frugal mind. It seems that "they" or "the government", two strange beings that have no connection with "We, the people", ought to supply such services free. These services must be the best in the world, too—or else!

And what has all this to do with the character that has been built into the aqueduct? Just this—that character is an added gift under the Christmas tree of the thirteen cities. One that will be there this year and in all the years to come. It is a present that won't have to be paid for because it is a gift from the aqueduct builders.

This character is composed of many things, one of the most important being the devotion to duty that has been displayed by aqueduct builders since the project was first started.

It has been a devotion to duty that held men on the job long after their eight-hour day was finished, not just in isolated instances but day after day, week in and week out.

The shifts changed every eight hours, but out along the ditch or back in a tunnel heading the superintendent or the resident engineer or a foreman or an inspector might be found at any time of the day or night. These men didn't work eight hours a day—they lived on the job, twenty-four hours a day. Long extra hours that included Sundays, and the aqueduct builders gave without compensation either in money or in extra time off.

They gave this time and effort voluntarily as an added measure, to guarantee that the job would be done right. To make sure that the aqueduct would more than meet every test that Time, or Nature, or Man would ever put it to.

Nor was this devotion to duty limited to superintendents and resident engineers and those "out where the wheels were turning." In camp offices along the long construction front the lights burned every night as men worked long after supper. Not a night shift—but men who had started work at 7:00 A. M.—and who were putting in their own time checking and double checking the thousand and one reports and field notes and forms so that the big job might be completed just a little ahead of schedule,

(*Continued on Page 9.*)



The Hayfield Reservoir and pumping plant as seen from the Indio-Desert Center Highway. Water is lifted 441 feet by this plant, the last of the five pumping plants on the aqueduct system.



The drafting room in the Los Angeles headquarters of the Distribution Division.

An Added Gift

(*Continued from Page* 8.)

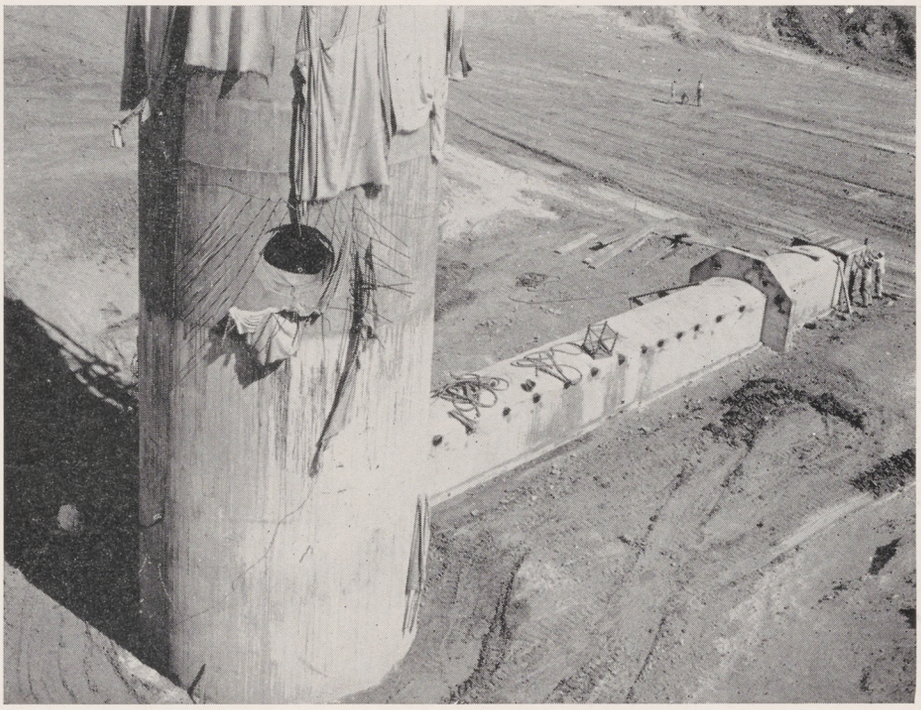
and that the costs might run under the estimates.

Those men depended upon those jobs for the livelihood of themselves and their families. And yet, they put in hours and days of their own time in order to finish the work ahead of schedule, and thereby end their only source of income.

All this does not infer that other men on other jobs haven't evidenced the same loyalty to their work. A comparison with one other similar job, however, brings out the value of this added Christmas gift to the golden cities.

Reporting from the east coast, where he is supervising a large project, a former District engineer tells of a section of an aqueduct being built that is almost an exact counterpart, in size and length, of a section of the Colorado River Aqueduct. The governmental agency doing the eastern job has forty engineers and inspectors on that particular section of line. On a section of exactly the same length and diameter, the Metropolitan Water District employed but six inspectors. Nevertheless, when it was tested the District's line went far beyond the maximum requirements set up in the rigid specifications.

This extra measure of loyalty was not confined to the field forces. All of the research, study, and ingenuity that went into the design of the aqueduct wasn't accomplished in eight-hour days or forty-four-hour week. Neither were all of the legal phases, nor the purchasing, nor right-of-way, nor accounting, nor any of the others of the numberless phases of the big job solved between 8:00 A. M. and 5:00 P. M.



A close-up of the Palos Verdes outlet tower taken during the construction period. Note, that as is shown in the picture at the top of page 5, the base of the tower is now buried beneath the reservoir embankment.



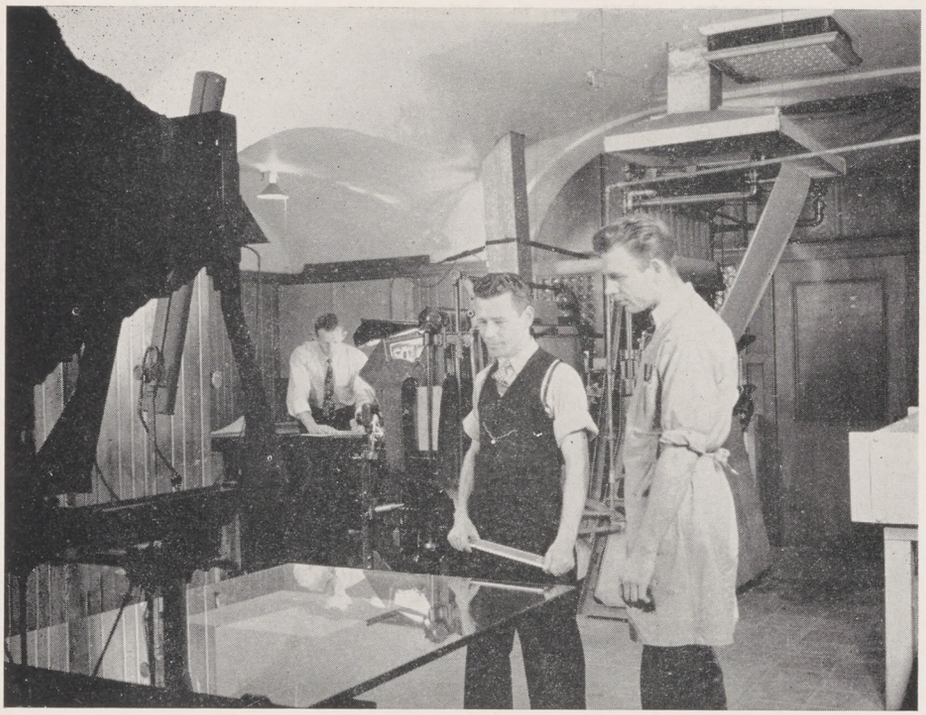
Hand grading in connection with excavation for the new water softening and filtration plant.

One group of men, the representatives of the District cities who comprise the Board of Directors, have served entirely without pay since the District was organized in 1928. In addition to their attendance at the regular meetings of the Board, these men have given many hours and days of their own time, for more than a decade, in determining and establishing the policies and principles under which the District operates.

Added to those in the field and office should be another list of hundreds and hundreds of names which will never be found in the official records. These are the names of the wives of the executives and foremen and inspectors and flunkies. Wives whose husbands were in the field for weeks and months on end. Wives of office men who knew that when the phone rang at 5:00 P. M. they'd eat supper alone because the message would be, "I'm working tonight." Wives who never planned week-ends because, "I've got to make a trip to the field" was their husband's usual report on Saturday morning.

There are other intangible ingredients that have gone into the character of the aqueduct that is the added gift this Christmas to the thirteen cities. One of these intangibles is the vast amount of extra-curricular knowledge and skill that the aqueduct builder was called upon to exhibit and make use of.

(*Continued on Page* 12.)



A section of the blueprint plant in the Los Angeles headquarters. In the left background is Everett Le Gette, and in the foreground, left, is Al Kibler, and right, Walt Winzell.

District Attention Now Centered On Distribution Lines

(*Continued from Page* 4.)

struction of these lines in the early spring of 1940.

This work will include two major delivery lines, one having a terminus in Santa Monica, and the other terminating in Santa Ana. Connecting with the west portal of San Rafael Tunnel No. 2, the proposed western line will provide water for Glendale and Burbank in San Fernando Valley, and a further projection of the line will deliver Colorado River water to Beverly Hills and Santa Monica. Approximately 25 miles of pipe lines will be built to serve these four cities.

Serving the District cities of Anaheim, Fullerton, and Santa Ana in Orange County will be another feeder approximately 26 miles long and connecting to the upper feeder at the new water softening and filtration plant now being built near La Verne.

As it is now being constructed, the distribution system will provide softened and filtered water for all of the cities in the Metropolitan Water District. All work on this system is under the direction of Distribution Engineer R. B. Diemer.

District To Be Represented In Rose Parade

In accordance with its custom of past years, the Metropolitan Water District will be represented by a float in the Tournament of Roses Parade in Pasadena on New Year's Day, 1940.

Representing the bounteous water supply now available on the coastal plain for the thirteen cities of the District, the central theme of the M.W.D. float will be a huge flower covered olla spilling water out on a golden plain.

The olla will be pure white, while the water will be represented by blue flowers. On the back of the float, which will be 33 feet in length, will be thirteen columns, representing the cities of the District. These columns will be of maroon colored flowers.

Adding beauty to the float will be two girls dressed in flowing white Grecian robes.

DISTRICT EMPLOYEES TO GET HOLIDAY DURING CHRISTMAS SEASON

Acting on the recommendation of General Manager Weymouth, the Board of Directors on December 1 granted all District employees an extra day's leave during the Christmas season.

Employees of the Los Angeles and Banning offices will take this holiday on two succeeding Saturday mornings, and accordingly, these offices will be closed on December 23, and December 30, 1939.



The two-inch gunite lining of the Palos Verdes Reservoir is reinforced with heavy steel wire. This picture shows how the wire was held away from the embankment while the gunite was being applied.

NEWS FROM FIELD AND OFFICE

It being that time of the year, it seems most appropriate to start this page with a most sincere wish for a Merry Christmas and a Happy New Year for all of the aqueduct clan. Even though that clan is now scattered far and wide, those left on the job still think of all of the gang when they speak of "aqueduckers"—a group that it will take more than Time or Distance to separate. Judging by the letters that come back from those who have moved on, they, too, still consider themselves part of that clan.

* * *

Colonel N. F. Jamieson, who has been with the District as Employment Officer since 1933, has announced his resignation from the M.W.D., to take effect December 31, 1939. The Colonel probably knows personally more of the vast aqueduct tribe than any other one man who has been on the job. For many years he was in charge of the District's Labor Office down on San Pedro Street in Los Angeles, and he personally interviewed most of the men who went out to the field, both on contract and force account work. He later moved his headquarters to the Third and Broadway building where he's been for the past year. Colonel Jamieson was born in Stannard, Vermont, in 1880, and for many years he was an officer in the United States Army. During World War I he commanded a regiment of Field Artillery in the A.E.F., and later was a member of the Inter-Allied Rhineland High Commission. Following the war he was employed as a Geologist and Mining Engineer in various parts of the West prior to coming with the District at the start of the heavy construction period. On January 1, 1940, he is assuming an executive position with a group of large contracting firms who are doing heavy construction work for the U. S. Navy at a number of its Pacific Ocean bases. His many friends in the aqueduct clan join in wishing him every success in his new position. Colonel Jamieson will be replaced in the Employment Office by Capt. Twyman, who is also well known on the aqueduct, having been previously employed for a number of years as an assistant to Colonel Jamieson in the Labor Employment Office.

* * *

Possibly it's due to the press of Christmas shopping, but few personal items have been sent in to the Society Editor for this issue of the News. One of the few is only an unconfirmed rumor. From the Electrical Division, word has sifted through that Bill Atwood is apparently married. No one knows for sure when, or to whom Bill was married, and he isn't around to provide an alibi for his mysterious actions for the past two or three weeks.

* * *

By the by, this dearth of news is going to cause the Society Ed. to start digging, unless more news is provided voluntarily. The Soc. Ed. has a file basket full of rumors which might be made interesting if a little research was devoted to them. This, of course, isn't blackmail (that being agin the law)—but, a word to the wise should be sufficient.

* * *

A recent visitor in the Los Angeles office was W. C. Christopher, formerly Design Engineer for the M.W.D. "Chris" was in town on a vacation trip from Mexico City where he is now employed by the Mexican Government on federal irrigation and reclamation work.

* * *

Another ex-aqueducker now employed on the new Friant Dam near Fresno is Charles Lingel. He worked for the District from 1934 to November, 1939, and was last employed as an electrician at the Potrero Shaft of the San Jacinto Tunnel.

Frank Finch, who was a long-time employee in the District's Design Division left Los Angeles on December 14 to go to Panama, where he has been employed by the U. S. Government as an associate engineer in connection with new construction work on the Panama Canal.

* * *

District employees have received many queries relative to the meaning of the word "Cajalco", which is an Indian word rather than of Spanish derivation, as is commonly thought. No formal research has been devoted to tracing the meaning of the name given to the terminal reservoir of the main aqueduct, but Mr. E. T. Ussery of Hemet has thrown some light on the matter. Mr. Ussery spent some time with the Comanche Indians in his youth and he states that in the language of that tribe, the word "Cajalco" means "a pleasant camping place", or "a happy place".

Aqueduct Temperatures

November 15 to December 15, 1939

	Max.	Min.
Div. 1	80°	39°
Div. 2	78°	45°
Div. 3	88°	35°
Banning	78°	38°



A characteristic pose of Colonel N. F. Jamieson, District Employment Officer, who is leaving the M.W.D. on December 31. See note above.

An Added Gift

(*Continued from Page 9.*)

Take the engineer for example.

To the average layman (and even sometimes to members of the profession) an engineer is one of the odd members of the human race. If asked real quickly, Mr. Layman will probably answer, "Engineer? Sure, he's the guy that runs the boiler in our building."

It may be possible to convince the layman that there are still other kinds of engineers, but the convincing probably won't get beyond the point that the other kinds draw pictures on paper and squint through transits.

Aqueduct engineers, of course, were employed because of their specialized skill and experience in some one of the various branches of the profession. But in addition to his specialized ability, he has to be a shrewd business man and have excellent understanding of economics, he is required to be a keen judge of human nature, he must be a student of world affairs (troop movements in Europe will do wonders to the price of steel), he has to know what this month's weather will do to the price of oranges, and so on and on.

Webster's dictionary sums it up best by the definition: "Engineering: the art of painstaking management".

Even though it will still be a year before the aqueduct begins delivering water to the thirteen cities, there are already many tangible evidences of this character that have been built into the aqueduct.

High on the list is the fact that the project is being completed at a cost many millions of dollars less than the original estimates.

Two great floods, the worst in the history of Southern California, have swept over completed sections of the aqueduct—one on the coastal plain and one on the desert. While the destructive forces of these floods caused millions of dollars of damage to other man-made structures, the District's report in both instances was, "No damage to the aqueduct".

The aqueduct lifts great quantities of water higher than ever before attempted. A vast pumping system had to be created and designed from the ground up. The personal reputations of years were staked on the fact that when a tiny switch was thrown this vast system would begin to operate perfectly. The switch was thrown—and the system operated perfectly the first time.

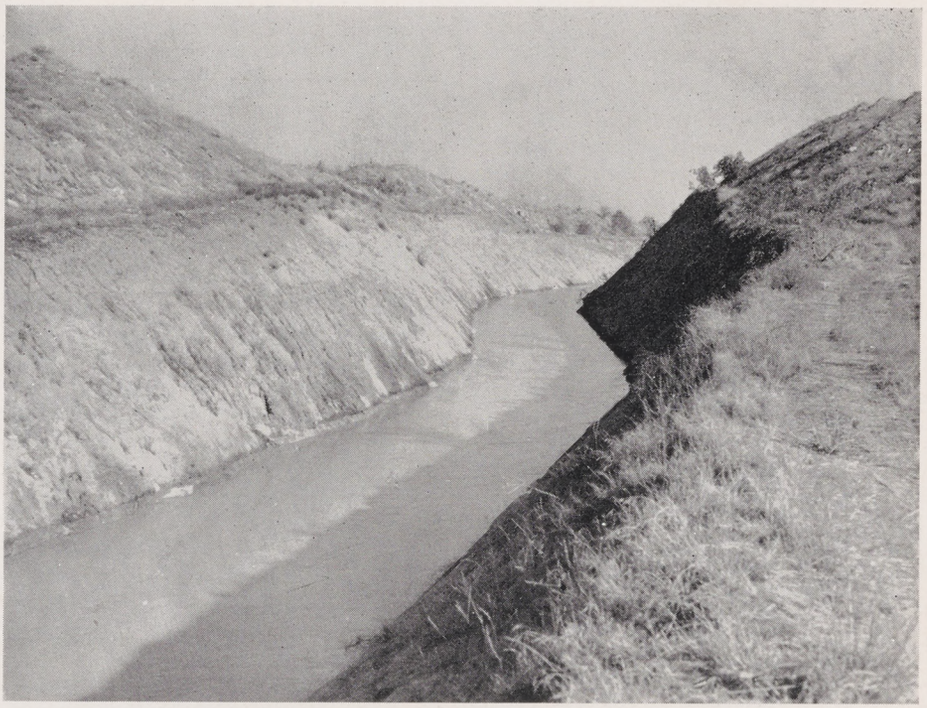
Undertaken was the driving of the most difficult tunnel in the history of construction. Dozens of qualified experts inspected the tunnel and said the odds were insurmountable. Grandstand quarterbacks by the hundreds scoffed, "It can't be done". The tunnel *was* driven. With machinery and equipment? Yes, but mostly with the undefeatable will-power of aqueduct builders who stuck out their chins and said "It can be done."

One of the nation's foremost leaders, the Federal Loan Administrator, recently addressed a letter to the District's Board of Directors in which he stated:

"It is worthy of note that there has been no breath of scandal in connection with the enterprise (the Colorado River Aqueduct), its promotion, financing, or administration."

These are but a few of the tangible evidences of the intangible ingredients of character that are mixed with the steel and concrete that make up the aqueduct.

On this Christmas of 1939 the thirteen cities have presented themselves with an unfailing water supply. And, in repayment for the confidence placed in them by the citizens of these cities, the rapidly fading army of aqueduct builders have left an added gift. They have built character into the aqueduct. It is a gift which money couldn't buy.



A section of the mile-and-a-half-long inlet channel which leads from the west portal of Valverde Tunnel to the Cajalco Reservoir.

Board Considers Many Requests For Annexation

(*Continued from Page 6.*)

The Metropolitan Water District of Southern California.

"The District is now faced with the necessity of getting under way within the next three months the construction of the Aqueduct distribution line extending from La Verne to Anaheim, Fullerton, and Santa Ana. As previously pointed out, the delivery of Aqueduct water to the South Coast Area would require that this distribution line be constructed with a larger capacity than that which will be needed to supply the requirements of the three Orange County cities now in the District. If provision is to be made for such enlargement, it will be necessary for the Board to be advised within the next sixty days of the steps which your Board and the other South Coast Areas may elect to take in organizing a district eligible for annexation to The Metropolitan Water District of Southern California."

At its meeting on December 1, 1939, the Board of Directors authorized General Manager Weymouth to grant to employees during 1940 annual leave which was earned but could not be granted during the year 1939.